

Date: Tuesday, 10/02/2009 2:24:56 PM  
 User: Julie Dawson

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : HELI ACCESS STEP LH HEAVY DUTY
<b>Job Number</b> : 45597	
<b>Estimate Number</b> : 12946	
<b>P.O. Number</b> :	
<b>This Issue</b> : 10/02/2009 <b>S.O. No.</b> :	<b>Part Number</b> : B41263001 <i>D2812 SUP</i>
<b>Prsht Rev.</b> : NC	<b>Drawing Number</b> : D2812 REV.B
<b>First Issue</b> : / / <b>Type</b> : LARGE FAB ASSY	<b>Project Number</b> : N/A
<b>Previous Run</b> : 45597	<b>Drawing Revision</b> : M
<b>Written By</b> :	<b>Material</b> :
<b>Checked &amp; Approved By</b> : <i>NO 09-02-10</i>	<b>Due Date</b> : 01/03/2009 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Comment</b> : Est Rev:F Now in Coss 07-07-17 JLM Verified By:EC Est Rev:G 09-02-10 rev.b as per dwg DD verified by:JLM	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	DC	DOCUMENT CONTROL
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**Comment:** DOCUMENT CONTROLPhotocopy bluefile & type labels per PPPD412-630-011 CHG-006 007 per ESN 09-512 *W*

2.0	D2622120C	Step Extrusion
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Qty	Part #	Description	Batch:
1	D2622-120C	Extrusion	<i>B44064</i>

Check Material for any Dents or Defects

*SAN 09-02-12*

3.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1
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**Comment:** LARGE FABRICATION RESOURCE 1

1-Cut D2622 extrusion to 88.12" long as per Dwg D2812

2-Deburr and bevel ends for welding

*SAN 09-02-12*

4.0	QC5	INSPECT WORK TO CURRENT STEP
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**Comment:** INSPECT WORK TO CURRENT STEP*S 09/02/12*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D442630041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

D2875

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)  
End Plate

Pick:

Qty	Part number	Description	Batch
1	D2875	End Cap	

Batch

B11351=1 B 45665=1

09-03-06

6.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld end cap as per Dwg D2812

2-Grind end cap welds flush

3-apply magnabond 6398 between mating surfaces where indicated

4-apply magnabond Batch:

4-assembly arms as pending

PTC

09-03-06

7.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

see step #21 S

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

see step #22 S

9.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SAD 09-03-04

10.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-03-04

11.0

D27953

Arm, LH



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)  
Arm LH

Pick:

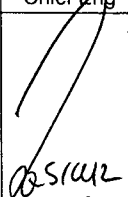

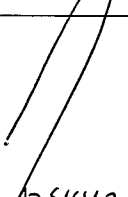
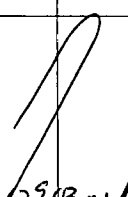
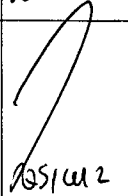


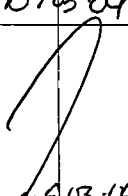
Qty	Part number	Description	Batch
1	D2795-3	Arm	

Batch

N/A

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D2812-043 UP PAR #: N/A Fault Category: Prod/Eng - Lrg NCR: (Yes) No DQA: D Date: 09/04/02  
 Resolution: USE AS IS Disposition: USE AS IS QA: N/C Closed: D Date: 09/04/02

NCR: <u>45597</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09-03-04	60	Step ends were cut opposite to drawing. They were cut as they would normally be cut for 350 steps. Dwg views were not looked at/or caught & inspected. D.C. Lack of attention.		Identify the step material with its correct batch #, and stock, for use on a short step 350.	SAD 09-03-04			
		2 step 3.0 & 4.0		Replace the step & cut as per dwg.	SAD 09-03-04			

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D412630041 *UP*

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

D2795043

Arm Assembly, LH



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Arm Assembly, LH

batch: *B45784*

*SAD 09-03-03*

13.0

D37301

Angle



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

Angle

*B39053*

*SAD 09-03-03*

14.0

D37411

Angle



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

Angle

*B38825*

*SAD 09-03-03*

~~15.0~~

CR321354

Cherry Rivet



Comment: Qty.: 24.0000 Each(s)/Unit Total: 24.0000 Each(s)

Cherry Rivet

*M107939*

*SAD 09-03-03*

~~16.0~~

MS20470AD516

Rivet



Comment: Qty.: 12.0000 Each(s)/Unit Total: 12.0000 Each(s)

Rivet

*M107100*

*SAD 09-03-03*

17.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-apply magnabond 6398 between mating surfaces where indicated

AIR magnabond Batch: \_\_\_\_\_

2-assemble arms and angles as per dwg

*8/29/03*

*SAD 09-03-03*

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*8/29/03* *ELLH*

19.0

D2875

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

End Plate

batch: *B11351=1 B45665=1*

*09-03-04*

# Dart Aerospace Ltd

W/O:		ESTIMATE: 12946 ?		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
9/13/13	# 15.0	<del>QC AF</del> Permit change QCS after riveting step Assy.			NA	09/04/17			S 09/13/17

Part No: D2812-043 UP PAR #: \_\_\_\_\_ Fault Category: Prod / Prod Lrg NCR: Yes No DQA: A Date: 09/04/22  
 Resolution: re-work Disposition: re-work QA: N/C Closed: D Date: 09/04/22

NCR: 45597		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9/15	# 16.0	Drilling inspection Found 6 rivets that are installed completely unsatisfactory. Rivets are cracked and not sitting any where flat.	JF QCS	Drill out affected Rivets. (6)	fl 9/15	6 OK	JF QCS	S 9/15
				inspect hole size after Rivet Removal (QC only)	fl 9/15	158" 5/16"		
				Re Abdrise if needed	fl 9/15	OK		
				Re install CR32135-4 B# <u>102939</u>	fl 9/15	OK		S 9/15

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D412630044 *2812.013 up*

Job Number:



Seq. #:

Machine Or Operation:

Description :

20.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1- Weld end cap as per Dwg D2812

2- grind weld flush as per dwg

3- realodine end cap only

*09-03-06*

21.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

*PD 09-03-06 11*

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*509/03/06*

23.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Green Sandtex (Ref: 4.3.5.8) as per QSI 005 4.3

*Touch up Machine*

*M 18144*

*a.m 09-03-06*

START TIME:

*8:05*

OVEN TEMPERATURE:

*320°*

FINISH TIME:

*8:35*

*cmp/*

*09/03/10*

24.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

25.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: Hand Finish

Wing Walk per Dwg D2812 and QSI 005 4.4

26.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

27.0

PACKAGING 1

PACKAGING RESOURCE #1




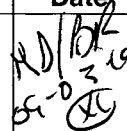
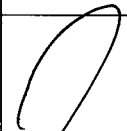
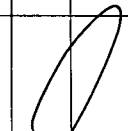
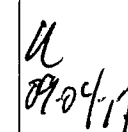
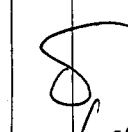
Comment: PACKAGING RESOURCE #1

Pick Assembly Kit

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D2812-043 UP PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: 12 Date: 07/04/22

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <u>45597</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/03/20	23.0	Steps were powder coated white. Not as instructed  R.C. Lack of attention to order		sand entire step with 320. pre heat step and powder coat green per w/o idwg.	 07/03/20		 07/03/22	 07/03/20
				<del>M18144 GREEN</del> customer cancelled - stock step weldment unprinted D2812-043UP		 07/04/22		 07/04/22

NOTE: Date & initial all entries



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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D42839041-161

Job Number:



Seq. #:	Machine Or Operation:	Description :
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28.0	D2012107	Clevis
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Clevis

Batch: \_\_\_\_\_

29.0	D2022101	Spacer
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Spacer

Batch: \_\_\_\_\_

30.0	D2652	Bushing
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bushing

Batch: \_\_\_\_\_

31.0	D2803041	Bracket Assembly
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Bracket Assembly

Batch: \_\_\_\_\_

32.0	D2804041	Bracket Assembly
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Bracket Assembly

Batch: \_\_\_\_\_

33.0	D2807041	Door prop
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Support Prop

Batch: \_\_\_\_\_

34.0	D28103	Strut
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Strut

Batch: \_\_\_\_\_

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 10/02/2009 2:24:56 PM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D412630011 *UP*

Job Number:



Seq. #:	Machine Or Operation:	Description :
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35.0	D2813	Washer
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Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)  
Washer  
Batch: \_\_\_\_\_

36.0	D2990041	Bracket Assembly LH
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
Bracket Assembly LH  
Batch: \_\_\_\_\_

37.0	AN320A	Bolt
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
Bolt  
Batch: \_\_\_\_\_

38.0	AN410A	Bolt
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
Bolt  
Batch: \_\_\_\_\_

39.0	AN816	Bolt
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Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)  
Bolt  
Batch: \_\_\_\_\_

40.0	AN3108	Nut
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Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)  
Nut  
Batch: \_\_\_\_\_

41.0	MS24665285	Cotter Pins
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Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)  
Cotter Pins  
Batch: \_\_\_\_\_

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

D2812-04348

Job Number: 45597

Part Number: D412630041

Job Number:



Seq. #:	Machine Or Operation:	Description :
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42.0	AN960JD10	Washer
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Washer

Batch: \_\_\_\_\_

43.0	AN960JD416	Washer
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: \_\_\_\_\_

44.0	AN960JD816	1/2" washer, Alum
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Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

1/2" washer, Alum

Batch: \_\_\_\_\_

45.0	MS21042L3	Nut
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: \_\_\_\_\_

46.0	MS21042L4	Nut
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Nut

Batch: \_\_\_\_\_

47.0	MS24693S280	Screw
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Screw

Batch: \_\_\_\_\_

48.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
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Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Inn D412-630

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D442630011 *up*

Job Number:



Seq. #:	Machine Or Operation:	Description :
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49.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

50.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1  
Pick Packing Kit

51.0	D2012107	Clevis
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)  
Clevis  
Batch: \_\_\_\_\_

52.0	D2022101	Spacer
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Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)  
Spacer  
Batch: \_\_\_\_\_

53.0	D28061	Bushing
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Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)  
Bushing  
Batch: \_\_\_\_\_

54.0	D28063	Bushing
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Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)  
Bushing  
Batch: \_\_\_\_\_

55.0	AN410A	Bolt
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)  
Bolt  
Batch: \_\_\_\_\_

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D412630011 *22812-04348*

Job Number:



Seq. #:

Machine Or Operation:

Description :

56.0

AN415A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

57.0

AN515A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

58.0

AN960JD416

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: \_\_\_\_\_

59.0

AN960JD516

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Washer

Batch: \_\_\_\_\_

60.0

MS21042L4

Nut



Comment: Qty.: 5.0000 Each(s)/Unit Total : 5.0000 Each(s)

Nut

Batch: \_\_\_\_\_

61.0

MS21042L5

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Nut

Batch: \_\_\_\_\_

62.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 10/02/2009 2:24:56 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HELI ACCESS STEP LH HEAVY DUTY

Job Number: 45597

Part Number: D412630011

Job Number:



Seq. #:

Machine Or Operation:

Description :

63.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D412-630-011

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_ FG

D2812-043ul

8809/04/15 (X)

64.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



U 09.04.17

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

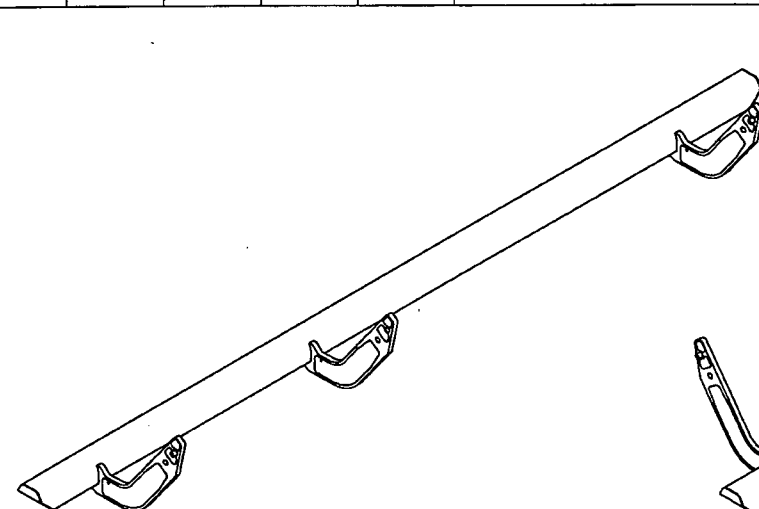
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

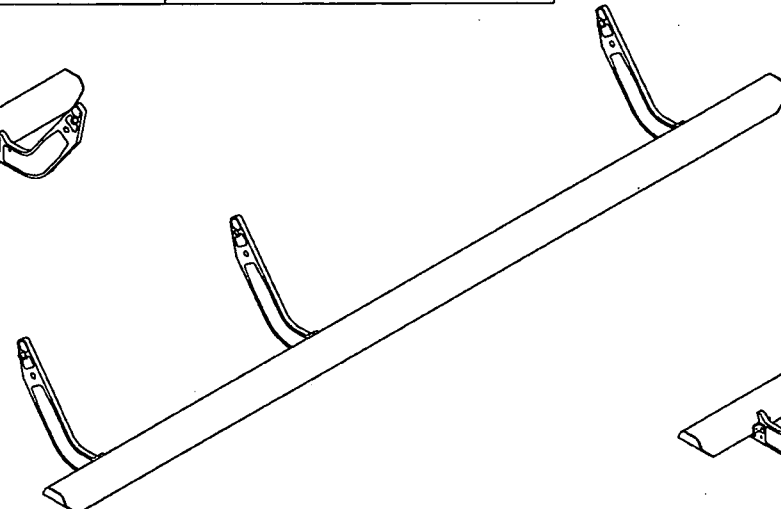
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

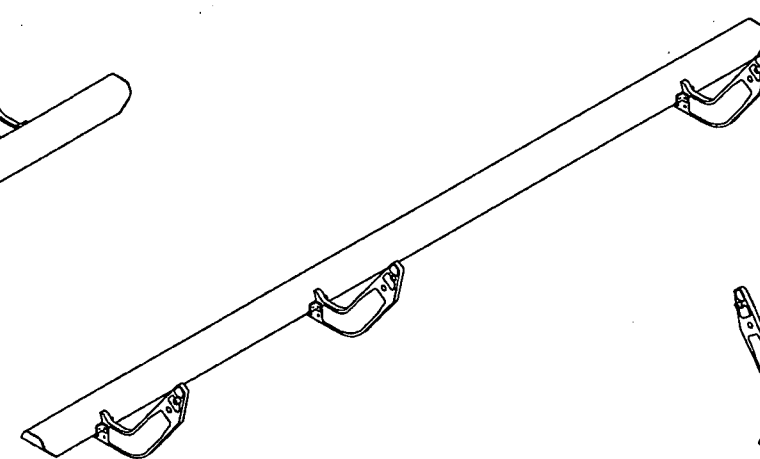
ITEM No.	QTY. -041	QTY. -042	QTY. -043	QTY. -044	PART NUMBER	DESCRIPTION
1	X				D2812-041	STEP WELDMENT
2		X			D2812-042	STEP WELDMENT
3			X		D2812-043	STEP ASSEMBLY
4				X	D2812-044	STEP ASSEMBLY
11	1	1	1	1	D2812-1	STEP
15	1				D2795-1	ARM
16		1			D2795-2	ARM
17			1		D2795-3	ARM
18				1	D2795-4	ARM
19	2				D2795-041	ARM ASSEMBLY
20		2			D2795-042	ARM ASSEMBLY
21			2		D2795-043	ARM ASSEMBLY
22				2	D2795-044	ARM ASSEMBLY
19	2	2	2	2	D2875	END PLATE
20			6	6	D3730-1	ANGLE
21			6	6	D3741-1	ANGLE
30			24	24	CR3213-5-4	RIVET
31			12	12	MS20470AD5-16	RIVET



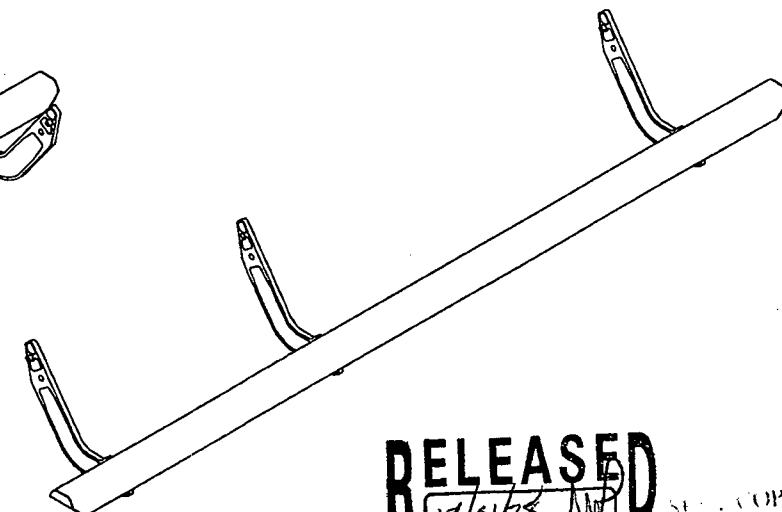
D2812-041 STEP WELDMENT



D2812-042 STEP WELDMENT



D2812-043 STEP ASSEMBLY



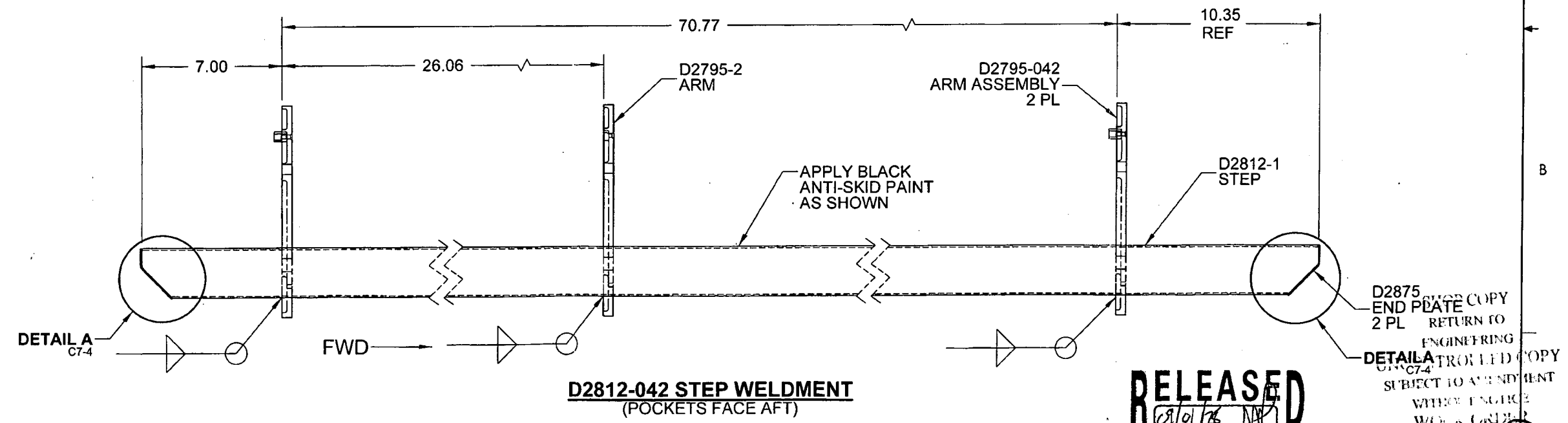
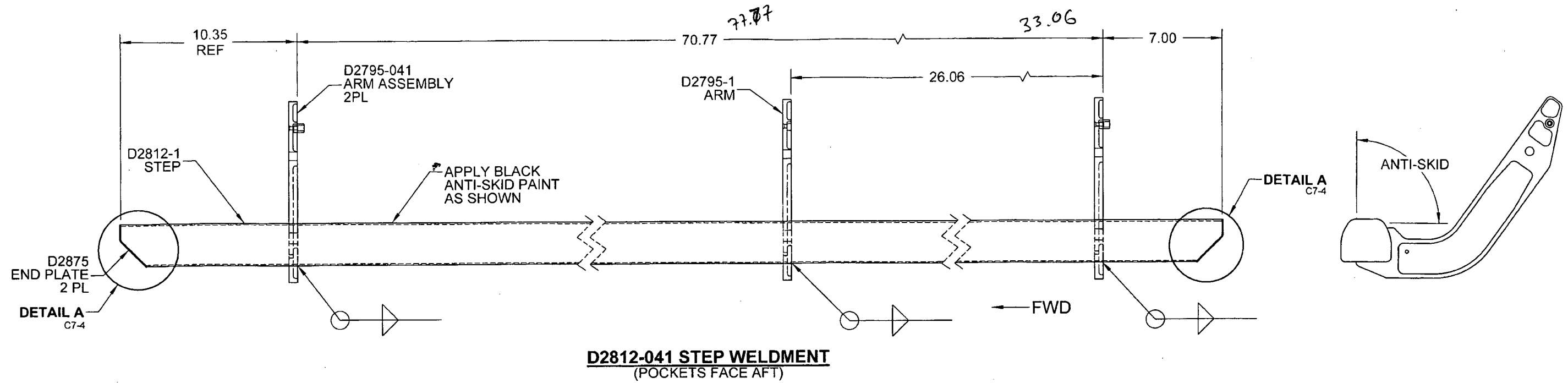
D2812-044 STEP ASSEMBLY

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69/01/28 WP

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WORK ORDER  
45597

B	REDRAWN IN SOLIDWORKS TO CURRENT DESIGN STANDARDS. -041 & -042 UNCHANGED. ADDED -043 & -044 TO ELIMINATE NEED FOR WELDING.	AJS	08.10.23
A	NEW ISSUE	DS	00.11.03
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS	DRAWING NO. REV. B D2812 SHEET 1 OF 4	
CHECKED		TITLE SCALE STEP ASSEMBLY NTS	
MFG. APPR.		DATE 08.10.23	
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DE APPR.			



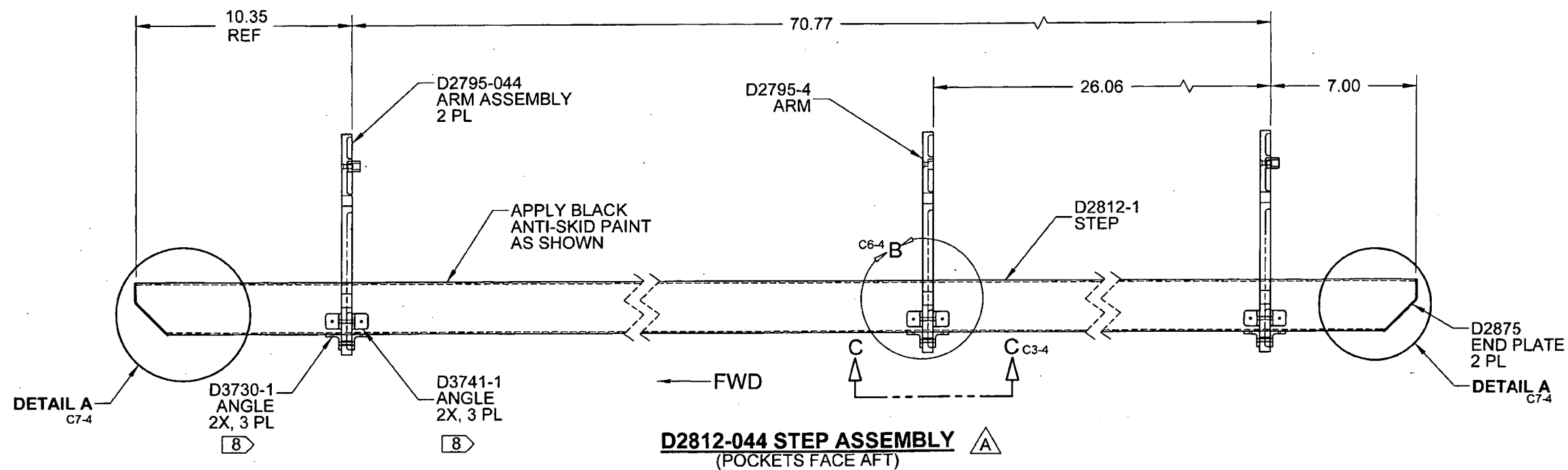
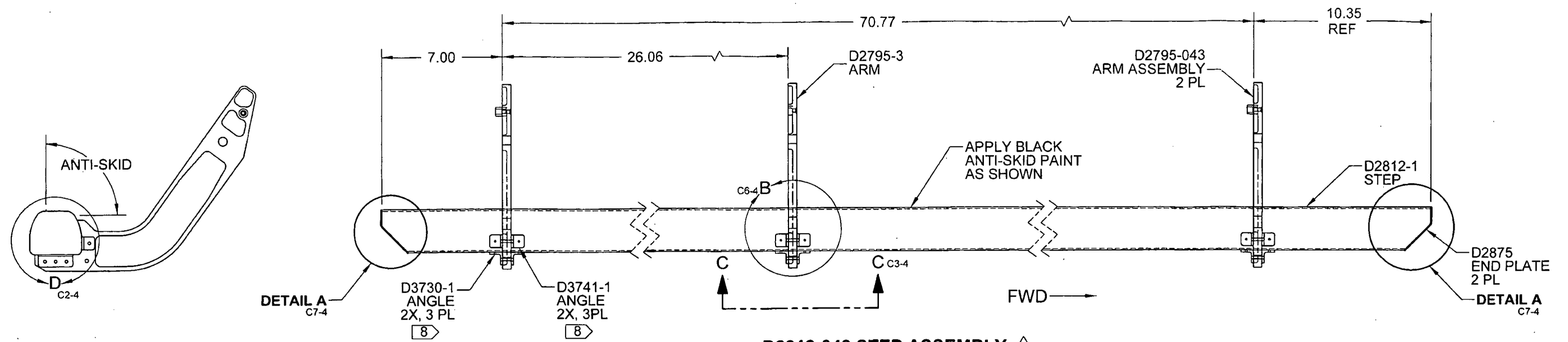


- NOTES:**
- 1) MATERIAL: N/A
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT GLOSS WHITE (4.3.5.1) OR  
GREY SANDTEX (4.3.5.6) OR  
GREEN SANDTEX (4.3.5.8) PER DART QSI 005 4.3  
APPLY BLACK ANTI-SKID PER DART QSI 005 4.4 WHERE INDICATED
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: N/A
  - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D2812-04X" USING FINE POINT PERMANENT INK MARKER
  - 7) WEIGHT: 10.12 lbs
  - 8) WELD PER QSI 004 UNLESS OTHERWISE NOTED.

**RELEASED**  
08/01/88

DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		<b>D2812</b>	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		<b>STEP ASSEMBLY</b>	NTS
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CONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHIN 12 MONTHS  
NO. 4539



# NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT GLOSS WHITE (4.3.5.1) OR  
GREY SANDTEX (4.3.5.6) OR  
GREEN SANDTEX (4.3.5.8) PER DART QSI 005 4.3  
APPLY BLACK ANTI-SKID PER DART QSI 005 4.4 WHERE INDICATED
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D2812-04X" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 10.59 lbs
- 8) APPLY MAGNABOND 6398 BETWEEN MATING SURFACES WHERE INDICATED

DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		<b>D2812</b>	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		<b>STEP ASSEMBLY</b>	NTS
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8/01/26

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4519





8

7

6

5

4

3

2

1

D

C

B

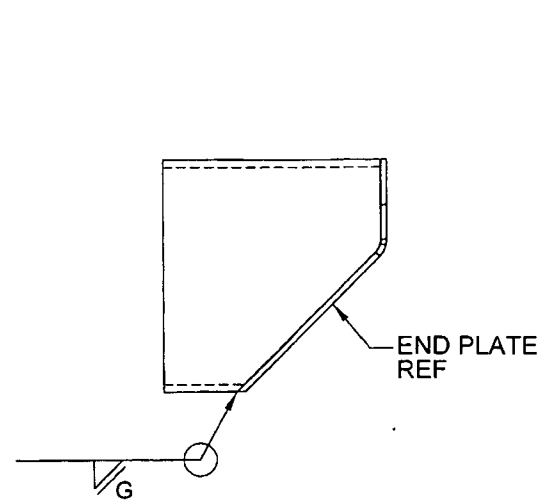
A

D

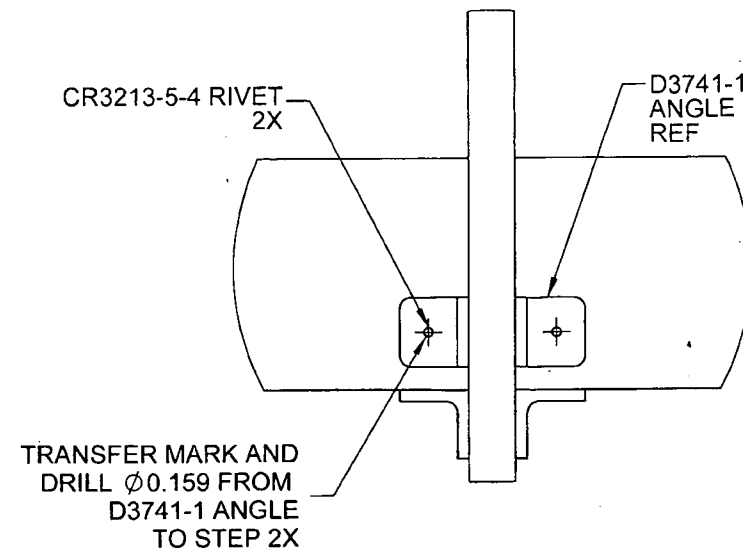
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B

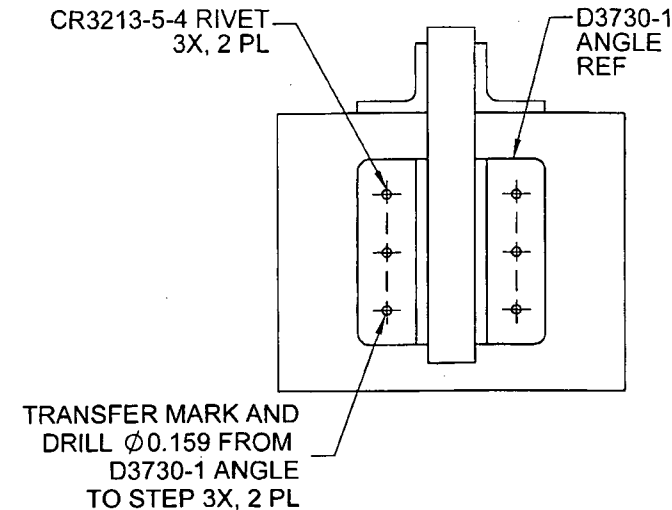
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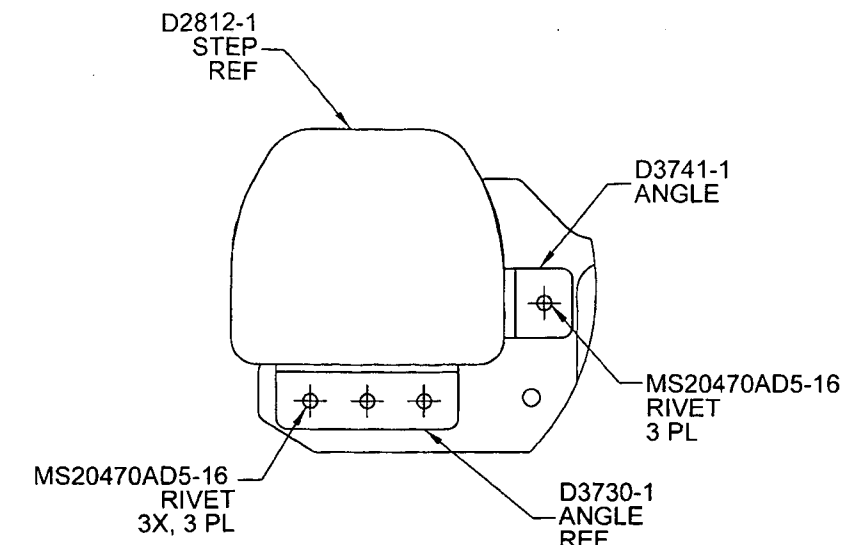
**DETAIL A** C8-2 C7-3  
SCALE 3X D2-2 C1-3  
A7-2 B8-3  
A1-2 B2-3



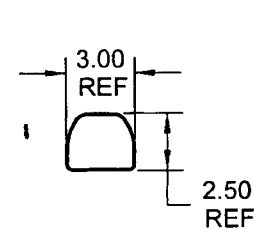
**DETAIL B** D5-3  
SCALE 3X B5-3  
3 PL



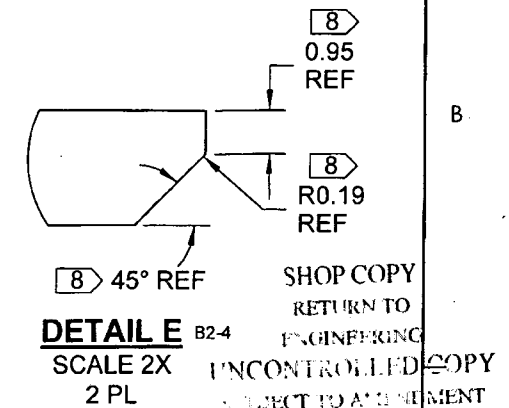
**DETAIL C** C4-3  
SCALE 3X B4-3  
3 PL



**DETAIL D** C8-3  
SCALE 3X B1-3



**D2812-1 STEP**



**DETAIL E** B2-4  
SCALE 2X  
2 PL

**RELEASED**  
29/10/16

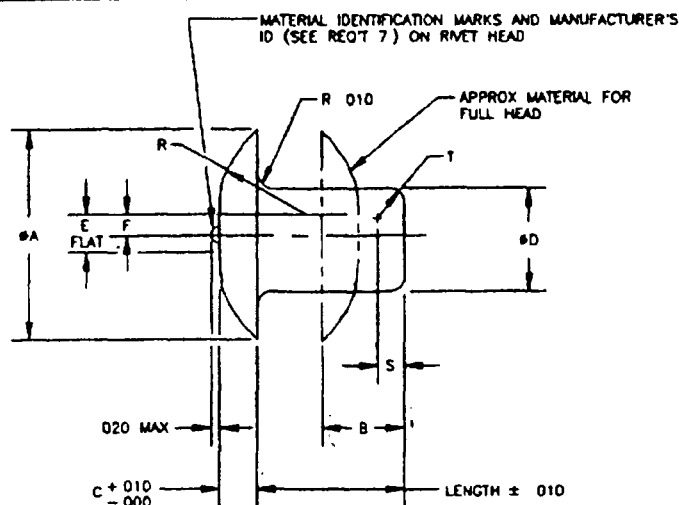
**D2812-1 NOTES:**

- 1) MATERIAL: MAKE FROM D2622 EXTRUSION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 6.46 lbs
- 8) SHAPE TO FIT D2875 END PLATE

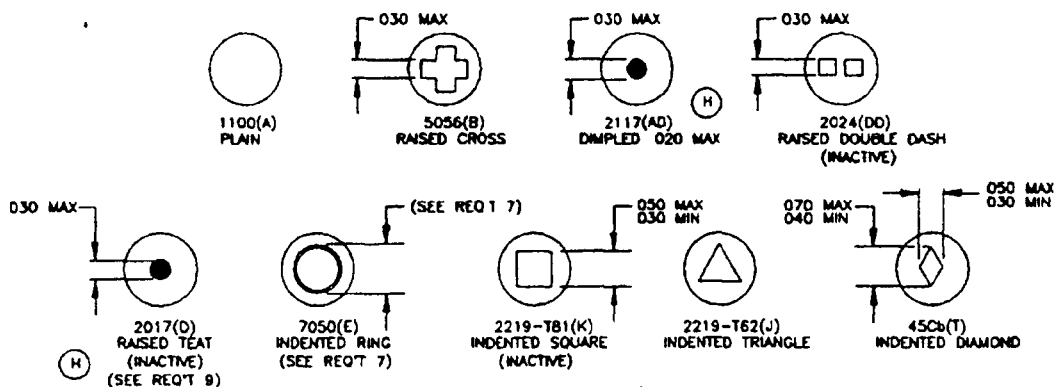
DESIGN	DS	<b>DART AEROSPACE LTD</b>	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D2812	SHEET 4 OF 4
APPROVED		TITLE	SCALE
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### MATERIAL IDENTIFICATION MARKS



**TABLE 1. RMET DIMENSIONS.**

NOM DIA	#D	#A	B	C	E	F	R	S	T RAD
1/16	062	125 ± 006	094	.027	031	015	054	016	019
3/32	094	187 ± 009	141	.040	046	023	082	023	029
1/8	125	250 ± 012	188	.054	062	031	108	031	039
5/32	156	312 ± 016	234	.067	078	039	135	039	049
3/16	187	375 ± 018	281	.080	093	046	164	047	059
7/32	219	437 ± 022	328	.093	109	054	193	054	069
1/4	250	500 ± 025	375	107	125	062	217	062	078
5/16	312	625 ± 031	469	133	156	078	272	078	098
3/8	375	750 ± 037	582	161	187	093	328	094	117

1/ TOLERANCE CHANGE APPLIES TO RIVETS MANUFACTURED AFTER 2 JULY 1990

(H) DENOTES CHANGE(S)

INCH-POUND

PREPARING ACTIVITY NAVY-AS CUSTODIANS ARMY-AR NAVY- AIR FORCE-99 DIA- REVIEW-AY, GL, IS, ME, MI, OS, 82 USER MC PROJECT NUMBER 5320-0806	<u>MILITARY SPECIFICATION SHEET</u> TITLE RMET, SOLID UNIVERSAL HEAD, ALUMINUM ALLOY AND TITANIUM COLUMBIUM ALLOY	SPECIFICATION SHEET NUMBER MS20470 14 SEP 83 REV H
		SUPERSEDING MS20470 C 28 JAN 91
	AMSC- N/A FSC 5320	
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited		Page 1 of 5

## L Lacelle

---

**From:** Bill Beckett [bbeckett@dartaero.com]  
**Sent:** March 12, 2009 7:24 AM  
**To:** 'L Lacelle'  
**Subject:** RE: Texas Aviaton Cancelled order / RE: 8009705

agreed

---

**From:** L Lacelle [mailto:llacelle@dartaero.com]  
**Sent:** March 12, 2009 7:06 AM  
**To:** 'Bill Beckett'  
**Subject:** RE: Texas Aviaton Cancelled order / RE: 8009705

I could stock them as UP (unpainted) for now, then take them out if we ever sell them.  
LL

---

**From:** Bill Beckett [mailto:bbeckett@dartaero.com]  
**Sent:** March 11, 2009 4:49 PM  
**To:** 'L Lacelle'  
**Subject:** RE: Texas Aviaton Cancelled order / RE: 8009705

Linda,  
can we leave them as is? I would rather not invest more \$\$ into these than we already have. Whatever we do will probably be wrong and we'll just have to re-work.  
Bill

---

**From:** L Lacelle [mailto:llacelle@dartaero.com]  
**Sent:** March 11, 2009 3:32 PM  
**To:** 'Bill Beckett'  
**Subject:** RE: Texas Aviaton Cancelled order / RE: 8009705

Want them painted white. grey or green to put in stock (drgw has all 3 colors)  
LL

---

**From:** Bill Beckett [mailto:bbeckett@dartaero.com]  
**Sent:** March 11, 2009 3:08 PM  
**To:** 'Heather Mahon'  
**Cc:** 'Shirley Hay'; 'Peggy McDonald'; 'L Lacelle'  
**Subject:** RE: Texas Aviaton Cancelled order / RE: 8009705

Heather,  
I agree with the 10%. This is basically a special order item.  
Bill

---

**From:** Heather Mahon [mailto:heather@darths.com]  
**Sent:** March 11, 2009 3:02 PM  
**To:** 'L Lacelle'; 'Bill Beckett'  
**Cc:** 'Shirley Hay'; 'Peggy McDonald'

12/03/2009

**Subject:** Texas Aviation Cancelled order / RE: 8009705

Hi Linda,

After discussing this with Texas Aviation, they have advised that their customer will not require these Heli-Access Steps and to cancel the order.

Bill,

I would suggest that we charge Texas Aviation a 10% re-stocking fee in this situation.

Please advise how you wish to proceed. I await your reply

I wish you blue skies and calm winds!

Heather J. Mahon  
North American Sales Manager

**DART Helicopter Services, LLC**

Tel: 1.613.632.3336

Tol: 1.800.556.4166

Fax: 1.613.632.4443

Cell: 1.613.796.5999

heather@darths.com

www.darthelicopterservices.com

---

**From:** L Lacelle [mailto:llacelle@dartaero.com]

**Sent:** March 11, 2009 12:46 PM

**To:** 'Shirley Hay'; 'Heather Mahon'

**Subject:** RE: 8009705

yeah, she said she'd get back to me...see attached drwg, can be painted green, grey or white... This is why I asked.

LL

---

**From:** Shirley Hay [mailto:shirley@darths.com]

**Sent:** March 11, 2009 12:42 PM

**To:** L Lacelle

**Subject:** RE: 8009705

Well..... when Texas went back to the customer they have now decided to cancel the order. I think Heather had been talking to you about it.

*Shirley Hay*

Sales Associate

**DART Helicopter Services, LLC**

---

**From:** L Lacelle [mailto:llacelle@dartaero.com]

**Sent:** March 11, 2009 12:31 PM

**To:** Heather Mahon

**Cc:** Shirley Hay

**Subject:** 8009705

Hi,

Any news on the color of the steps?

12/03/2009

Thank You,  
Linda Lacelle  
Production Manager  
Dart Aerospace Ltd

***"We provide solutions"***

---

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